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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LANDAU, MATTHEW C

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 10/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/706,088

Applicant(s)

WALKER ET AL.

Examiner

Matthew Landau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 2-6,8,9,12,14-16 and 20-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,7,10,11,13 and 17-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 2-6, 8, 9, 12, 14-16, and 20-38 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 9.

In regards to the restriction requirement between Group I and Group II, Applicant's arguments on pages 2 and 3 are found to be persuasive. Therefore, Examiner hereby withdraws the restriction requirement between Group I, a laser diode system, and Group II, a method for using a laser diode system. However, Examiner maintains the restriction requirement between Species I, II, and III, drawn to Figures 7, 8, and 9, respectively.

Applicant's election with traverse of Species I, drawn to claims 1, 7, 10, 11, 13, and 17-19 in Paper No. 9 is acknowledged. The traversal is on the ground(s) that the invention is illustrated in all figures. This is not found persuasive because the restriction requirement states that Figures 7, 8, and 9 are drawn to different species of the invention. If applicant disagrees that the indicated species are not patentably distinguished from one another, then he should state for the record that each species are obvious variations whereby the restriction requirement will be withdrawn.

The requirement is still deemed proper and is therefore made FINAL.

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Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the incident beam" in line 10 of the claim. There is insufficient antecedent basis for this limitation in the claim.

In regards to claim 10, it is unclear if the elements (cylindrical lens, collimating element, diffraction grating) are on each of the two beam paths, or on just one beam path.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 7, 10, 11, 13, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Stephens.

In regards to claim 1, Figure 10 of Stephens discloses a high power diode laser system having narrow spectral width output comprising: a high power diode laser 38 that produces

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multimode laser light output at a power levels of at least one watt and having a relatively broad spectral range (column 5, lines 1-7); a collimating element L_1 positioned to receive the output of the laser diode and provide a collimated output beam; and a diffraction grating 50' mounted to receive the collimated beam from the collimating element on a beam path, the diffraction grating 50' oriented at an angle to the incident beam such that a portion of the light in the beam incident on the grating is directed back on the beam path to the collimating element and is focused on the diode laser to provide feedback thereto to narrow the spectral range of the laser light output.

In regards to claim 7, Figure 10 of Stephens discloses the collimating element comprises a spherical lens.

In regards to claim 10, Figure 10 of Stephens discloses the diode laser 38 provides two spatially diverging output beams on two beam paths from two active regions (column 9, lines 10-27), and including a cylindrical lens L_2 positioned in the beam path between the collimating element and the diffraction grating, the cylindrical lens L_2 formed and positioned to image the output of the diode onto the grating, the first order diffraction feedback from the grating directed by the cylindrical lens L_2 and collimating element back to the diode laser to form an image of the diode output such that each of the two diode active regions is imaged back onto itself (column 9, lines 10-27).

In regards to claim 11, Figure 6 of Stephens discloses a portion of the beam incident on the diffraction grating is directed by the grating to provide a useable output light beam 52 from the laser system (column 7, lines 60-62).

In regards to claim 13, Figure 10 of Stephens discloses a method of narrowing the spectral width of the output of a high power diode laser that produces multimode laser light

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output at power levels of at least one watt having a relatively broad spectral range, comprising: receiving the output of the diode laser 38 with a collimating element L_1 to provide a collimated output beam; and directing the collimated output beam to a diffraction grating 50' mounted to receive the collimating beam from the collimated element L_1 on a beam path, and directing a portion of the beam from the grating 50' back on the beam path to the collimating element L_1 and focusing the beam on the diode laser 38 to provide feedback thereto to narrow the spectral range of the laser light output.

In regards to claim 19, Figure 6 of Stephens discloses directing a portion of the beam from the diffraction grating 50' to provide a useable output light beam 52 (column 7, lines 60-62).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephens in view of Cates, Jr. et al. (US Pat. 5,860,295, hereinafter Cates).

In regards to claims 17 and 18, the difference between Stephens and the claimed invention is passing the output light beam from the diffraction grating into a cell containing a gas sample to laser polarize the gas. Figure 1 of Cates discloses passing the output of a high power

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laser diode array 1 into a cell 4 containing a gas sample to laser polarize the gas, which comprises a mixture of Xe and Rb. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Stephens for the purpose of producing polarized gas for MRI.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (703) 305-4396.

The examiner can normally be reached from 8:00 AM-4:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Matthew C. Landau

Examiner

October 4, 2002